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Brief Communication

Retrospective Analysis of 75 Patients with Pulmonary Mucosa-associated Lymphoid Tissue Lymphoma in China☆

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SUMMARY

Pulmonary mucosa-associated lymphoid tissue (MALT) lymphoma is the most frequently occurring subtype of primary pulmonary lymphoma. We retrospectively reviewed articles that reported pulmonary MALT lymphoma in the China National Knowledge Infrastructure, WANFANG database, and VIP database published between January 1987 and December 2011, and then investigated the clinical characteristics and outcomes of the patients in these reported articles. A total of 128 pulmonary MALT lymphoma cases were identified and 75 cases had complete information. These results can be used as preliminary data for planning further studies.

1. Introduction

Mucosa-associated lymphoid tissue (MALT) lymphoma is a distinct subtype of low-grade malignant B-cell extranodal non-Hodgkin lymphoma (NHL)[1,2]. Pulmonary MALT lymphoma accounts for < 1% of all lymphomas, although it comprises more than two-thirds of all primary NHL of the lungs[3,4]. Because there have been only a few sporadic reports regarding pulmonary MALT lymphoma, the optimal management strategy is not well defined. Thus, we reviewed the literature for determining the clinical features of pulmonary MALT lymphoma and the therapeutic approaches used for these patients in China.

2. Methods

For the period from January 1987 to December 2011, patients with pulmonary MALT lymphoma were identified in the China National Knowledge Infrastructure, WANFANG database, and VIP database. The diagnosis in all cases had been made by the histological and pathological features of extranodal marginal zone lymphoma (MZL) of MALT type, as classified by the International Lymphoma Study Group. Medical records at the time of diagnosis, treatments, and follow-up were systematically reviewed. Repeated cases and those with inadequate data were excluded.

3. Results

A total of 128 patients met our inclusion criteria. The treatment of 104 patients had been described and 75 patients had detailed follow-up material.

3.1. Clinical features

The patient group 71 males and 57 females and the mean age was 51.2 years (range: 25–87 years). The male-to-female ratio was 1.25:1. The clinical features are presented in Table 1.

3.2. Diagnostic procedures and pathological diagnoses

Final diagnoses were determined by pathological biopsy[5]. For all cases, the diagnosis was made by the pathological biopsy. Pathological tissues were obtained by surgical biopsy for 71 patients (55.3%), computed tomography (CT)-guided percutaneous lung biopsy for 43 patients (33.6%), bronchoscopy for 13 patients (10.2%), thoracoscopy for one case (0.8%), and ultrasound-guided biopsy for one case (0.8%). CT-guided biopsy and bronchoscopy were both used for one case.

☆ Conflicts of interest: All contributing authors declare that they have no conflicts of interest.

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Table 1
Clinical signs and symptoms of 128 patients with pulmonary mucosa-associated lymphoid tissue lymphoma.

Variable	*N* (%)
Asymptomatic work-up	26 (23)
Symptoms	
Expectoration	59 (46.1)
Chest distress	27 (21.1)
Chest pain	26 (20.3)
Dry cough	19 (14.8)
Tachypnea	18 (14.1)
Hemoptysis	16 (12.5)
Dyspnea	8 (6.3)
Fever	24 (18.8)
Sweats	2 (1.6)
Lesion characteristics	
Nodule or mass	74 (57.8)
Infiltrates	56 (43.8)
Patchy	9 (7.0)
Interstitial	4 (3.1)
Specific change	
Air bronchogram	44 (34.4)
Pleural effusion	11 (8.6)
Hilar lymph node enlargement	2 (1.6)
Mediastinal lymph node enlargement	2 (1.6)

All pathological samples showed dense proliferation of small lymphocytes that had infiltrated the lung. Immunohistochemical staining was done for 74 cases, and all tumor cells were positive for CD20 or CD79 expression.

3.3. Treatments and outcomes

Treatments were described for 104 patients. Seven patients were left untreated and 97 patients received various treatment combinations, including surgery (44.3%), chemotherapy (29.9%), surgery plus chemotherapy (19.6%), surgery plus radiochemotherapy (3.1%), chemotherapy plus radiotherapy (2.1%), and anti-inflammatory therapy (1%). The regimens used for chemotherapy were cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP), cyclophosphamide, vincristine, and prednisone (CVP), rituximab and CHOP (R-CHOP), and R-CVP.

Seventy-five patients had the detailed follow-up information (Table 2). The duration of median follow-up was 48 months (range: from 1 month to 17 years). Of these 75 cases, 68 patients showed stable disease (without metastasis or improvement), four patients showed intrapulmonary or lymphatic metastasis, two patients showed slight improvement, and one patient died.

4. Discussion

According to our retrospective study, the median age of pulmonary MALT lymphoma was 51.2 years, and there was a male preponderance[6–8]. With regard to clinical features and radiographic appearances, both were not specific. The major treatments used were surgery, chemotherapy, or a combination of both. Seventy-five patients had detailed follow-up data, and 90.1% of them had stable disease.

Table 2
Outcomes for 75 patients at follow-up.

Treatments	Outcome				Total
	Good prognosis	Metastasis	Improvement	Died	
Surgery	24 (89)	2 (7)	1 (4)	0	27
Chemotherapy	26 (90)	1 (3)	1 (3)	1 (3)	29
Sur + Chem	11 (92)	1 (8)	0	0	12
Anti-inflammation	3 (100)	0	0	0	3
Untreated	4 (100)	0	0	0	4
Total	68	4	2	1	75

Data are presented as *n* (%).
Sur + Chem = surgery combined with chemotherapy.

Previous studies reported that pulmonary MALT lymphoma occurred most often in patients age 60 years; the sex differences reported were conflicting in these studies. Our current study, consistent with earlier studies, implied that the clinical and imaging manifestation were both atypical and had numerous similarities with several other diseases, such as lung cancer, tuberculosis, and pneumonia[2,9]. The diverse manifestations always led to misdiagnosis of pulmonary MALT lymphoma. In addition, the treatment was various and similar to that presented in other studies. Recently, researchers reported anti-inflammatory treatment with clarithromycin was an effective treatment strategy for pulmonary MALT lymphomas[10,11].

One limitation of the study was the incomplete epidemiological data and previous medical history. These data would be helpful in better understanding of the presentation and course of disease[12].

We screened 128 cases, and only 75 of them had complete follow-up data. There are currently no standard treatment protocols of pulmonary MALT lymphoma. Thus, perfect follow-up data is needed. Patients' unwillingness to cooperate and loss of contact with the physician may be the main reasons for difficulty obtaining a prognosis.

Despite these limitations of the study, the observation and results of the current study may be suitable for use as an initial reference for clinicians dealing with pulmonary MALT lymphoma.

In conclusion, the current study confirmed that pulmonary MALT lymphoma had an indolent behavior and a good prognosis regardless of medical or surgical treatment. Further clinical studies with a larger number of patients and complete clinical data are needed to identify the risk factors and prognostic factors, and establish treatment guidelines.

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